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09/853,001	05/10/2001	Michel Anthony Pugel	PU010081	5850

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JOSEPH S. TRIPOLI  
THOMSON MULTIMEDIA LICENSING INC.  
2 INDEPENDENCE WAY  
P.O. BOX 5312  
PRINCETON, NJ 08543-5312

EXAMINER

LI, SHI K

ART UNIT	PAPER NUMBER
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2633

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DATE MAILED: 05/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/853,001

Applicant(s)

PUGEL, MICHEL ANTHONY

Examiner

Shi K. Li

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 February 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 19-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 19-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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### DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

#### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 21 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 2 recites the limitation "the first control signal is a RF signal". As indicated in FIG. 1, the first control signal is a light signal. Nowhere does the specification teach to use RF signal as the first control signal. Therefore the limitation is considered as new matter.

#### *Claim Rejections - 35 USC § 103*

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. Claims 19, 23-28 and 33-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harrington (U.S. Patent 4,897,883) in view of Tigwell (U.S. Patent 5,227,780), Eisaku (Japan Patent Publication P2001-8278A) and Smith (U.S. Patent 4,856,081).

Regarding claims 19, 33-35 and 37, Harrington discloses a remote control system in FIG.

1. The remote control system comprises a first control device 3 for transmitting a first IR control

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signal 16, a second control device 4, a third control device 5 and a IR controllable device 1.

Harrington shows in FIG. 3 and FIG. 4 the structure for third control device and second control device. The device 5 receives a first control signal from control device 3 and transmits a RF signal to control device 4. Control device 4 receives the RF signal and converts it into an IR control signal for controlling the IR controllable device 1. The difference between Harrington and the claimed invention is that Harrington does not teach the extracting of an IR carrier frequency from the first control signal. Tigwell teaches in col. 2, line 65-col. 3, line 17 that it is not desirable to directly convert the signal from IR to RF and some encoding method is needed to comply with FCC rules. Eisaku teaches in FIG. 9 a message format for transmitting carrier information and remote control code to a remote control device. Finally, Smith teaches in FIG. 5a and FIG. 5b and col. 13, line 44 to col. 14, line 6 a method for determining carrier frequency. One of ordinary skill in the art would have been motivated to combine the teaching of Tigwell, Eisaku and Smith with the remote control system of Harrington because detecting IR carrier frequency, as taught by Smith, and encoding IR carrier frequency in a short message, as taught by Eisaku, avoid sending RF signal in a bandwidth that violates FCC rules, as taught by Tigwell. Therefore, it is obvious to combine the teachings of Tigwell, Eisaku and Smith with the remote control system of Harrington to include means for extracting command information, including IR carrier frequency, from the first control signal and encode the information for transmitting from the third control device to the second control device where the first IR control signal is reproduced because such approach complies with FCC rules.

Regarding claims 23 and 36, Harrington teaches to use an IR signal as the first control signal.

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Regarding claim 24, Smith teaches a method for determining IR carrier frequency.

Regarding claim 25, the transmitting means transmits RF signal with encoded command information and, therefore, no IR carrier.

Regarding claim 26, Tigwell teaches in col. 4, lines 42-44 the use of amplitude modulation.

Regarding claim 27, Eisaku teaches in 12 to include a plurality of control devices with respective controllable devices. It is well known in the art that RF signal can be simultaneously received by the plurality of control devices.

Regarding claim 28, dotted box 14 of FIG. 1 of Harrington suggests to put the first device and the third device in an enclosure.

Regarding claim 38, Harrington teaches in col. 3, line 18 that the IR frequency is in the range of 40,000 Hz. It is well known in the art that more than four bits are needed to encode such a frequency range.

6. Claims 19-22, 33-35 and 37-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thomas (U.S. Patent 6,400,480 B1) in view of Tigwell (U.S. Patent 5,227,780), Eisaku (Japan Patent Publication P2001-8278A) and Smith (U.S. Patent 4,856,081).

Regarding claims 19, 33-35 and 37, Thomas discloses in FIG. 1 a remote control system with extended range. The remote control system comprises a first control device 1 for transmitting a first IR control signal 3 or a first RF control signal 4, a second control device 6, a third control device 5 and a IR controllable device 2. The device 5 receives a first control signal from control device 1 and transmits a RF signal to control device 6. Control device 6 receives the RF signal and converts it into an IR control signal for controlling the IR controllable device

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2. The difference between Thomas and the claimed invention is that Thomas does not teach the extracting of an IR carrier frequency from the first control signal. Tigwell teaches in col. 2, line 65-col. 3, line 17 that it is not desirable to directly convert the signal from IR to RF and some encoding method is needed to comply with FCC rules. Eisaku teaches in FIG. 9 a message format for transmitting carrier information and remote control code to a remote control device. Finally, Smith teaches in FIG. 5a and FIG. 5b and col. 13, line 44 to col. 14, line 6 a method, as an example, for determining carrier frequency. One of ordinary skill in the art would have been motivated to combine the teaching of Tigwell, Eisaku and Smith with the remote control system of Thomas because detecting and encoding IR carrier frequency avoid sending RF signal in a bandwidth that violates FCC rules. Therefore, it is obvious to combine the teachings of Tigwell, Harvey and Smith with the remote control system of Thomas to include means for extracting command information, including IR carrier frequency, from the first control signal and encode the information for transmitting from the third control device to the second control device where the first IR control signal is reproduced because such approach complies with FCC rules.

Regarding claims 20-21, Thomas teaches to transmit both a RF signal 4 and an IR signal 3 as the first control signal. It is obvious to encode the IR carrier frequency in the RF signal because otherwise, FCC rules would be violated as explained above.

Regarding claims 22 and 38, Harrington teaches in col. 3, line 18 that the IR frequency is in the range of 40,000 Hz. It is well known in the art that more than four bits are needed to encode such a frequency range.

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7. Claims 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harrington, Tigwell, Eisaku and Smith as applied to claims 19, 23-28 and 33-37 above, and further in view of Anderson et al. (U.S. Patent 6,130,910).

Harrington, Tigwell, Eisaku and Smith have been discussed above in regard to claims 19, 23-28 and 33-37. The difference between Harrington, Tigwell, Eisaku and Smith and the claimed invention is the method of modulating the RF transmitter. Anderson et al. teaches in FIG. 1 an efficient way of modulating the transmitter by modulating the power supply of the power amplifier 260. One of ordinary skill in the art would have been motivated to combine the teaching of Anderson et al. with the modified remote control system of Harrington, Tigwell, Eisaku and Smith because the method of Anderson et al. is highly efficient and especially suitable for handheld or portable devices. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to modulate the power supply with the control signal, as taught by Anderson et al., in the modified remote control system of Harrington, Tigwell, Eisaku and Smith because the method of Anderson et al. is highly efficient and especially suitable for handheld or portable devices.

Regarding claim 30-32, it is well known in the art that modulation index affects efficiency, distortion etc. and is a design parameter that can be adjusted based on the applications.

8. Claims 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thomas, Tigwell, Eisaku and Smith as applied to claims 19-22, 33-35 and 37-38 above, and further in view of Anderson et al. (U.S. Patent 6,130,910).

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Thomas, Tigwell, Eisaku and Smith have been discussed above in regard to claims 19-22, 33-35 and 37-38. The difference between Thomas, Tigwell, Eisaku and Smith and the claimed invention is the method of modulating the RF transmitter. Anderson et al. teaches in FIG. 1 an efficient way of modulating the transmitter by modulating the power supply of the power amplifier 260. One of ordinary skill in the art would have been motivated to combine the teaching of Anderson et al. with the modified remote control system of Thomas, Tigwell, Eisaku and Smith because the method of Anderson et al. is highly efficient and especially suitable for handheld or portable devices. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to modulate the power supply with the control signal, as taught by Anderson et al., in the modified remote control system of Thomas, Tigwell, Eisaku and Smith because the method of Anderson et al. is highly efficient and especially suitable for handheld or portable devices.

Regarding claim 30-32, it is well known in the art that modulation index affects efficiency, distortion etc. and is a design parameter that can be adjusted based on the applications.

#### ***Response to Arguments***

9. Applicant's arguments with respect to claims 19-38 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).



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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shi K. Li whose telephone number is 703 305-4341. The examiner can normally be reached on Monday-Friday (8:30 a.m. - 5:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 703 305-4729. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

skl

  
JASON CHAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600